

THE DECAY-OUT OF THE SD BAND IN ^{190}Hg AND A DISCUSSION OF PAIRING IN SD STATES

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A comprehensive understanding of superdeformed (SD) bands requires knowledge of the quantum numbers (spin and parity) and excitation energies of the levels in the second well. In particular, these quantities allow for stringent tests of theoretical orbital assignments and, more importantly, of the ability of theory to correctly calculate shell-correction energies at large deformation. However, although more than 250 SD bands are known, in the mass 150 and 190 region only a few SD bands have their spins and excitation energies determined through one-step linking transitions.

The decay out of the SD band in ^{190}Hg has been investigated using the EUROBALL detector array. The analysis of the quasi continuum decay spectrum connecting SD and ND states has been performed. The results are in good agreement with a one-step linking transition. Comparing the excitation energy and spin of the SD band in ^{190}Hg with previous results for $^{191,192}\text{Hg}$ we get information on pairing in the SD well.

Looking at the neutron separation energies we see that it is easier to remove a neutron from the SD well than from the ND well. And comparing the neutron separation energies within the SD well, it is easier to remove a neutron from ^{191}Hg than from ^{190}Hg indicating that there is still pairing in SD states.